STUDIES IN ULTRA-VIOLET AND RESPIRATORY PHENOMENA. III

The Influence of Various Regions of the Spectrum on the Anaerobic Fermentation of Yeast[1]

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As was pointed out in the first paper of this series,[2] the claim that ultra-violet irradiation stimulates the fermentation of yeast is based on very insecure foundations. The recent revival of this claim warrants a new and more critical approach to the problem. The present paper reports the results of an attempt to duplicate the essential features of the work of Owen[3] but under more accurately controlled experimental conditions.

EXPERIMENTAL PROCEDURE

The CO_2 elimination was determined by observing the positive pressure developing in the Barcroft differential manometer. Similar vessels were attached to each arm, one vessel receiving the yeast suspension while the other remained empty. Both were thoroughly swept out with nitrogen and the manometer taps immediately closed. After shaking for 30 minutes in

[1] The investigations reported in this paper were carried on through aid from the Science Research Fund of Washington University, St. Louis, provided by the Rockefeller Foundation.

[2] Wynd, F. Lyle, and Reynolds, E. S. Studies in ultra-violet and respiratory phenomena. I. Review of work published before June, 1935. Ann. Mo. Bot. Gard. **22**: 771–835. 1935.

[3] Owen, W. L. Ultra-violet irradiation stimulates yeast activity. Food Industries **5**: 252–254. 1933.